REMARKS

Applicants request reconsideration of the application in view of this Office Action Response.

Claim 1 is amended to clarify that the correlation function calculated is auto-correlation as opposed to cross-correlation. This method calculates an auto-correlation function based on sum functions of sets of symbol sequences of a transmitted space time transmit diversity (STTD) symbol. The auto-correlation is performed on portions of the transmitted STTD signal and does not involve a cross-correlation with another signal.

Dabak does not disclose auto-correlation. Instead, Dabak discloses only cross-correlation. Dabak's method reduces inter-symbol interference between "each symbol of each finger for each user" (*Dabak*, col. 7, lines 54-55) for the purpose of better estimating symbol decisions for each user data stream, which indicates cross-correlation. Because Dabak fails to teach auto-correlation, Dabak does not anticipate claim 1 under 35 U.S.C. § 102(e).

Claims 2, 4, and 10 are amended to reflect the amendment of claim 1. The claims define the correlation function as an auto-correlation function. Since claims 2, 4, and 10 are dependent on claim 1, they are not anticipated by Dabak under 25 U.S.C. § 102(e).

Claim 14 defines an apparatus having a frequency discriminator for obtaining a frequency error estimate of the difference between a reference frequency and the frequency of a STTD signal. As with claim 1, the correlation function recited in claim 14 is an auto-correlation function, which is implicit in the language of the claim. Particularly, it is well known to one with ordinary skill in the art that the conjugation means and the multiplier means identify the correlation function as an auto-correlation function.

It would not have been obvious to modify Dabak to arrive at the method of claim 14. Dabak is directed to reducing inter-symbol interference in a multi-user system and naturally requires cross-correlation. Therefore, Dabak teaches away from using auto-correlation. In contrast, claim 14 specifically requires the use of auto-correlation to obtain a frequency error estimate. Therefore, claim 14 is not obvious over Dabak under 35 U.S.C. § 103(a).

Claim 35 is added as dependent on claim 1 to indicate that the frequency error is a carrier frequency error and the reference frequency is a receiver reference frequency. Dabak does not teach using any particular frequency as a reference frequency. Further, Dabak does not describe carrier frequency error correction because it explicitly describes "Rayleigh fading parameters." (*Dabak*, col. 6, lines 10, 43 and 50). Rayleigh fading parameters are well known to those with ordinary skill in the art as Gaussian distributed random processes that spread a baseband frequency with the bandwidth of maximum Doppler spreading, which does not model carrier frequency error relative to a local frequency reference. Therefore, claim 35 is patentable.

For the foregoing reasons, Applicants respectfully submit that this application is in condition for allowance. The Examiner is, therefore, respectfully requested to pass this case to issue.

Respectfully submitted,

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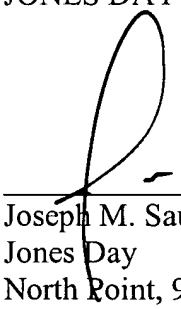

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